

New Records of the Genera *Hypsicera* Latreille and *Acerataspis* Uchida (Hymenoptera, Ichneumonidae, Metopiinae) from Korea

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Abstract The genera *Hypsicera* Latreille and *Acerataspis* Uchida are newly recognized from Korea. Of them six species, *H. makiharai* Kusigemati, *H. femoralis* (Fourcroy), *H. rugosa* Kusigemati, *H. carinata* Momoi et Kusigemati, *H. nigribasis* Momoi et Kusigemati and *A. clavata* (Uchida) are newly recorded for the first time in Korea. A key to the Korean species of the genus *Hypsicera*, based on the external characters are provided.

Key words Hymenoptera, Ichneumonidae, Metopiinae, *Hypsicera*, *Acerataspis*, Korea

INTRODUCTION

The subfamily Metopiinae is widely distributed throughout the world, from the arctic to the tropics regions and in dry and in wet climates. All the species of Metopiinae are parasitic on Lepidoptera. The genera *Hypsicera* and *Acerataspis* are easy to distinguish, as they have face entirely convex, middle tibia with two spurs, abdomen clavate, back of head vertical behind posterior ocelli, face in profile sloping forward to its upper margin.

In this study, the genera *Hypsicera* Latreille and *Acerataspis* Uchida are newly recognized from Korea. Of them six species, *H. makiharai* Kusigemati, *H. femoralis* (Fourcroy), *H. rugosa* Kusigemati, *H. carinata* Momoi et Kusigemati, *H. nigribasis* Momoi et Kusigemati, *A. clavata* (Uchida), are newly recorded for the first time in Korea.

The terminology and abbreviation used are as followings: CB-Chungbuk; CN-Chungnam; GB-Gyeongbuk; GG-Gyeonggi; GN-Gyeongnam; GW-Gangweon; JB-Jeonbuk; JN-Jeonnang; JJ-Jeju; BI (Brachial index of forewing)-Shortest distance Cu1 and 1A (Distal end)/Shortest distance Cu1 and 1A (Proximal end); CI (Cubital index of forewing)-Length of Cu1 between 1 mCu and Cua/Length of Cu1b; DBI (Disco-brachial index of forewing)-Length of Cu1 between Cua and 1 mCu/Length of 1 mCu between 2 rm, 3 rm and Cu1; MI (Marginal index of forewing)-Length of Rs/Length of Rs-2 rm; NI (Radial index of hind wing)-Length of Cu1 between M and irm2/Length of irm2 between Cu1 and 1A;

RI (Radial index of hind wing)–Length of Rs between R1 and *irm*1/Length of *irm*1 between Rs and M; IOD–Distance between lateral ocellus and median ocellus; OOD–Distance between lateral ocellus and eye; POD– Distance between lateral ocellus and occipital carina; MOD–Maximum diameter of lateral ocellus. All the examined materials are deposited in the collection of the Animal Taxonomy Laboratory, College of Science, Yeungnam University, Korea. A taxonomic key and photographs are provided here in.

TAXONOMIC ACCOUNT

Genus *Hypsicera* Latreille 수중다리몽톡맵시벌속 (신칭)

Hypsicera Latreille, 1829: 288. Type species: *Ichneumon femoralis* sensu Gravenhorst.

Metacoelus Foerster, 1868: 161. Type species: *Ichneumon femoralis* Fourcroy.

Polyclistus Foerster, 1868: 161. Type species: *Ichneumon femoralis* Fourcroy.

Plesioexochus Cameron, 1905: 102. Type species: *Plesioexochus rufipes* Cameron.

Diagnosis. Body punctures fine, moderately close; combined face and clypeus strongly convex transversally, weakly convex longitudinally, sloping forward from mouth to near antennal sockets; upper edge of face produced between antennal sockets as a short broad point which is bent backward a little between bases of antennae; temple convex; occipital carina weak or absent laterally, absent above and below; cheek about 1.1 times as long as basal width of mandible; first tergite rather narrow basally, its spiracles near its basal 0.35, its lateral longitudinal carina sharp, usually to the apex, its median longitudinal carinae sharp basally, usually obsolescent some where beyond the middle length of the tergite.

Key to the species of the genus *Hypsicera* Latreille

1. Fore and mid tarsal claws pectinate 2
 - Fore and mid tarsal claws simple 4
2. Propodeum with basal area separated from areola far before costula *H. makiharai* Kusigemati
 - Propodeum with basal area confluent with areola 3
3. Antennal scrobe of frons strongly concave, unsclupture and polished. Second abdominal tergite with sublateral longitudinal carinae obtuse, becoming an obtuse round ridge posteriorly *H. femoralis* (Fourcroy)
 - Antennal scrobe of frons not or weakly differentiated in structure and sclupture. Second abdominal tergite with sublateral longitudinal carinae sharp throughout *H. rugosa* Kusigemati
4. Propodeum with basal area separated from areola by a strong carina *H. carinata* Momoi et Kusigemati
 - Propodeum with basal area confluent with areola *H. nigribasis* Momoi et Kusigemati

***Hypsicera makiharai* Kusigemati** 긴뺨수중다리몽톡맵시벌 (신칭)

(Figs 2, 8)

Hypsicera makiharai Kusigemati, 1971: 257.

Diagnosis. Propodeum with basal area separated from areola far before costula. Fore and mid tarsal claws pectinate. Mandible dark brown; face on upper median part, interantennal process, tegula, pedicel and scape yellowish brown. Legs light yellowish brown; hind coxa and femur light reddish brown.

Measurements. CI: 0.83–1.0, BI: 1.0, DBI: 0.7–0.75, MI: 2.57–3.6, NI: 3.0–4.0, RI: 4.2, RC: 0.8–1.33, NB: 1.78–2.25, IOD/OOD: 0.67–0.75, IOD/POD: 2.0, IOD/MOD: 0.17–0.5, POD/MOD: 0.17–0.25.

Materials examined. GB-2♂, Gyeongsansi, 22 VI 1989; 1♀, Unmunsa Temple, 28 V 1989, GN-2♂, Jinjusi Gajwadong, 15 VIII 1989.

Distribution. Japan, Korea (new record).

Remarks. This species is similar to *H. femoralis* (Fourcroy), but can be distinguished from the latter by the following characters: first abdominal tergites 1.2 times as long as wide at apex; sublateral longitudinal carinae obtuse; propodeum completely areolated; areola separated from basal area far before costula.

***Hypsicera femoralis* (Fourcroy)** 넓적수중다리몽톡맵시벌 (신칭)

(Figs 3, 9)

Ichneumon femoralis Fourcroy, 1785: 396; Thomson, 1887: 218; Timberlake, 1918: 399; Townes and Townes, 1959: 161; Townes, 1947: 106; Viereck, 1914: 74; Ashmead, 1901: 340; Holmgren, 1873: 61; Roman, 1931: 23.

Exochus amicus var. *ruficoxis* Seyrig, 1934: 45.

Plesioexochus rufipes Cameron, 1905: 203.

Diagnosis. Antennal scrobe of frons is strongly concave, unsculptured and polished. Second abdominal tergite with the obtuse sublateral longitudinal carinae, becoming an obtuse round ridge posteriorly. Propodeum with basal area confluent with areola.

Measurements. CI: 0.67–0.81, BI: 1.0, DBI: 0.41–0.5, MI: 2.13–2.33, NI: 2.5–3.0, RI: 0.5, RC: 1.0–1.43, NB: 2.0–2.2, IOD/OOD: 0.59–0.75, IOD/POD: 6.0–7.0, IOD/MOD: 1.5–2.33, POD/MOD: 0.22–0.25.

Materials examined. GB-1♀, Mt. Palgong, 7 VII 1987, GN-2♀, Mt. Jiri, 24 VI 1989; 1♂, Uljugun Sangbugmyeon, 28 VI 1989; 1♂, Mt. Gaji, 26 VI 1989, GG-1♀, Mt. Cheonggye, 4 VII 1989.

Distribution. Japan, Korea (new record).

Host. *Choristoneura murinana* (Lepidoptera: Tortricidae).

Remarks. This species is similar to *H. rugosa* Kusigemati, but easily distinguished from the latter by the following characters: face of head closely punctured; frons finely and closely punctured; antennal scrobe slightly concave; hind femur about 2 times as long as wide in lateral view.

***Hypsicera rugosa* Kusigemati 수중다리몽톡맵시벌 (신칭)**

(Figs 4, 10)

Hypsicera rugosa Kusigemati, 1971: 255–256.

Diagnosis. Head with mandible unidentate; frons strongly and closely punctured. Hind tibia with basal and apical blackish bands distinct. Antennal scape of frons not or weakly differentiated in structure and sculpture. Second abdominal tergite with sublateral longitudinal carinae sharp throughout. Propodeum with basal area confluent with areola.

Measurements. CI: 0.8–0.9, BI: 1.0–1.17, DBI: 0.57–0.6, MI: 2.57–3.5, NI: 2.5–4.0, RI: 7.14, RC: 1.0–1.71, NB: 1.69–1.33, 1st RE: 0.39–0.67, IOD/OOD: 0.8, IOD/POD: 6.0, IOD/MOD: 1.0, POD/MOD: 0.17.

Materials examined. GW-1 ♀, Mt. Taebaeg 23 VI 1989, GB-1 ♂, Gyeongsansi 30 V 1989, GN-1 ♂, Mt. Jiri 15 VI 1989; 1 ♂, Uljugun Sangbugmyeon, 25 VI 1989.

Distribution. Japan, Korea (new record).

Remarks. This species is closely allied to *H. femoralis* (Fourcroy), but differs from the latter by the following characters: mandible unidentate; frons polished, faintly and sparsely punctured; hind femur 2.7 times as long as wide in lateral view.

***Hypsicera carinata* Momoi et Kusigemati 등줄수중다리몽톡맵시벌 (신칭)**

(Figs 5, 11)

Hypsicera carinata Momoi et Kusigemati, 1970: 412; Kusigemati, 1971: 257–258.

Diagnosis. Propodeum with basal area separated from areola by a strong carina. Fore and mid tarsal claws simple. Legs light yellowish brown; hind tibia sometimes a little darker at both ends.

Measurements. CI: 2, BI: 0.18–0.22, DBI: 0.4–0.44, MI: 3–3.4, NI: 3, RC: 0.75–1.5, NB: 2–2.25, RE: 0.5, IOD/OOD: 0.45–0.6, IOD/POD: 5–6, IOD/MOD: 1–1.2, POD/MOD: 0.2.

Materials examined. GN- 2 ♂ 2 ♀, Mt. Jiri, 9 VIII 1989.

Distribution. Japan, Korea (new record).

Remarks. This species is similar to *H. nigribasis* Momoi et Kusigemati in superficial appearance, but easily distinguished from the latter by the followings: second abdominal tergite with sublateral longitudinal carinae; face of head finely and closely punctured; legs slender; hind femur 3.2–3.5 times as long as wide in lateral view.

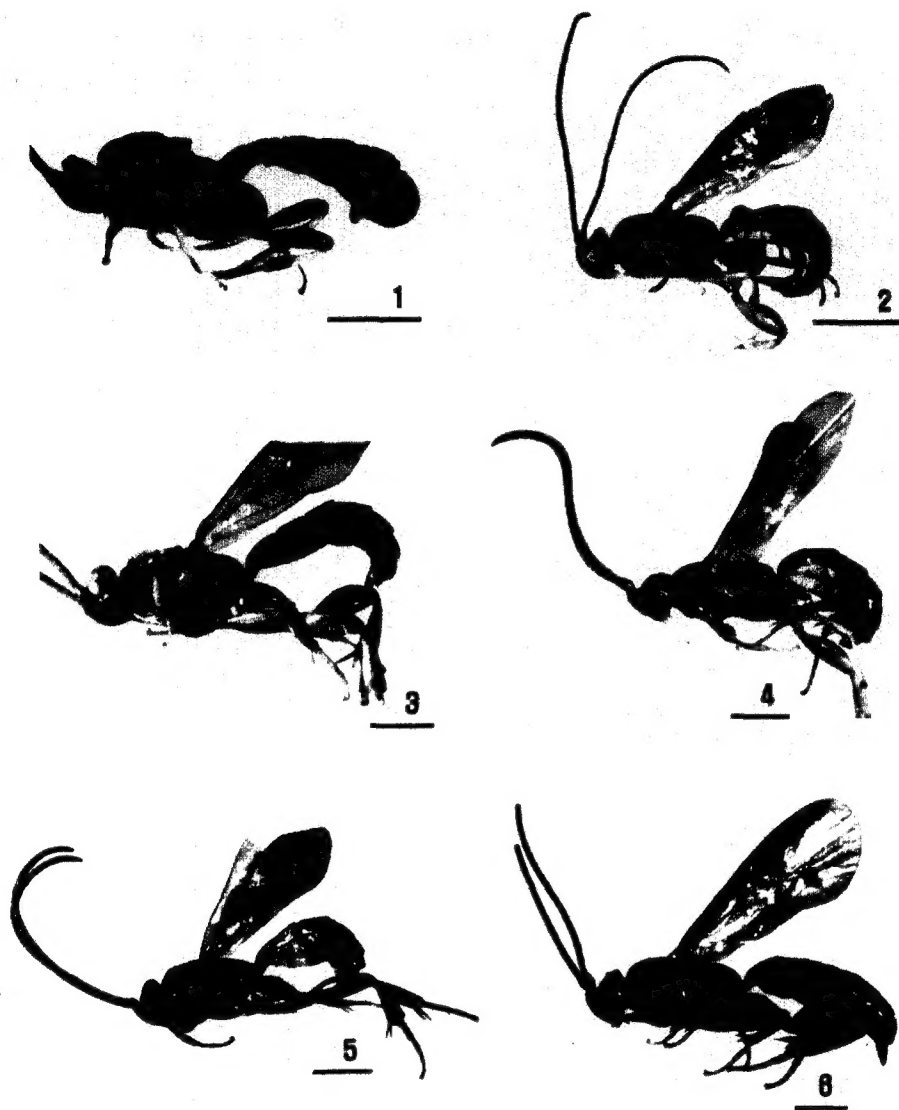
***Hypsicera nigribasis* Momoi et Kusigemati 꼬마수중다리몽톡맵시벌 (신칭)**

(Figs 6, 12)

Hypsicera nigribasis Momoi et Kusigemati, 1970: 411; Kusigemati, 1971: 259.

Diagnosis. Propodeum with basal area confluent with areola. Fore and mid tarsal claws simple. Second abdominal tergites with sublateral longitudinal carina present.

Measurements. CI: 8.0, BI: 0.44, DBI: 0.73, MI: 1.17, NI: 4.0, RC: 1.33, NB: 2.0, IOD/OOD: 0.7,



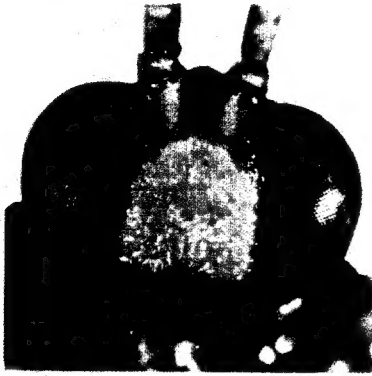
Figs 1-6. Adults, lateral view: 1. *A. clavata*, 2. *H. makiharai*, 3. *H. femoralis*, 4. *H. rugosa*, 5. *H. carinata*, 6. *H. nigribasis*. Scale bars = figs 1-2: 2 mm; figs 3-6: 1 mm.

IOD/POD: 7.0, IOD/MOD: 1.4, POD/MOD: 0.2.

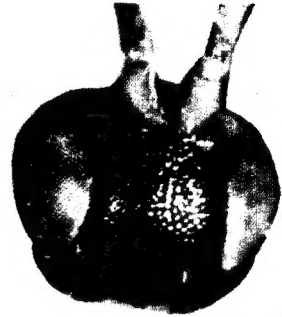
Materials examined. GB-1 ♂, Gyeongsansi, 16 VI 1989, GN-1 ♂, Mt. Jiri, 25 VII 1989; 1 ♂, Jinjusi Gajwadong, 3 VII 1989; 1 ♂, Uljugun Sangbugmyeon, 10. VIII 1987; 1 ♂, Changryeong, 26 VI 1987.

Distribution. Japan, Korea (new record).

Remarks. This species is quite similar to *H. carinata* Momoi et Kusigemati, but can be distinguished from the latter by the following characters: second abdominal tergite with sulateral longitudinal carina; forewing radius originating from just middle of stigma; stigma narrow, about 3.8 times as long as wide.



7



8



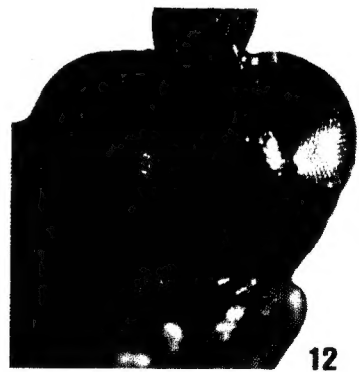
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Figs 7-12. Heads, frontal view: 7. *A. clavata*, 8. *H. makiharai*, 9. *H. femoralis*, 10. *H. rugosa*, 11. *H. carinata*, 12. *H. nigribasis*. Scale bars = 3 mm.

Genus *Acerataspis* Uchida 곤봉뿔맵시벌속 (신칭)

Acerataspis Uchida, 1934a: 23.

Cerataspis Uchida, 1934b: 275.

***Acerataspis clavata* (Uchida) 곤봉뿔톡맷시벌 (신칭)**

(Figs 1, 7)

Cerataspis clavata Uchida, 1934b: 276; Michener, 1940: 122; Kusigemati, 1971: 209–210.

Diagnosis. Face and clypeus moderately convex, temple very short, mostly flat; occipital carina complete, cheek about 0.4 as long as the basal width of mandible. Abdomen clavate, the fifth and sixth segments wider than the preceding segments; midtibia of male bearing with one spurs. Areolet present; interantennal process of face forming a high semicircular flange between antennal sockets; second abdominal tergite with a pair of median longitudinal carina. Forewing 7mm to 9mm; nervulus opposite basal vein or a little beyond it.

Measurements. Cl: 0.78–0.92, Bl: 1.36–1.6, DBI: 0.85–0.97, MI: 1.36–1.88, ICI: 0.21–0.24, NI: 2.0–2.8, RI: 4.2–4.8, RC: 1.44–1.78, NB: 3.0–3.68, IOD/OOD: 0.5–0.6, IOD/POD: 0.25–0.38, IOD/MOD: 0.4–0.75, POD/MOD: 2.5–3.2.

Materials examined. GB-1 ♂, Mt. Juwang, 28 VII 1984; 6 ♂, Unmunsa Temple, 23 VII 1989.

Distribution. Japan, Korea (new record).

Remarks. This species is closely similar to Japanese species, *A. sinensis* Michener (1940), but can be distinguished from the latter by the following characters: areola about as wide as second lateral area measured along anterior margin, entirely smooth polished, nearly hexagonal; scutellum in a median transverse band and subtegular ridge entirely yellow.

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한국산 미기록속 수중다리몽톡맵시벌속과 곤봉몽톡맵시벌속 (벌목, 맵시벌과, 줄몽톡맵시벌아과)에 관한 연구

차진열 · 김종갑 · 이종욱

영남대학교 생물학과

한국산 수중다리몽톡맵시벌속과 곤봉몽톡맵시벌속은 미기록속으로 밝혀졌다. 연구에서 밝혀진 6종, *Hypsicera makiharai* Kusigemati, *H. femoralis* (Fourcroy), *H. rugosa* Kusigemati, *H. carinata* Momoi et Kusigemati, *H. nigribasis* Momoi et Kusigemati 및 *Acerataspis clavata* (Uchida)은 한국에서 처음으로 기록된다. 분류형질로서 중요한 두부 정면 및 성충사진을 제시하고, *Hypsicera*속에 관해서는 검색표를 제시하였다.

검색어: 벌목, 맵시벌과, 줄몽톡맵시벌아과, 수중다리몽톡맵시벌속, 곤봉몽톡맵시벌속, 한국

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